after the tumor removal, starting irradiation after 3–5 days and keeping the tubes 10–12 days. Dose was 3–4 Gy per fraction, twice a day, 10 sessions if free surgical margin and 11 if affected. If the final pathology showed positive nodes, fewer sessions were administrated (5–6) and EBRT was added.
Results. Median follow-up was 28 months (1–115). There was local recurrence in 6 cases, with actuarial local control of 83% at 2 years (90% in pT1, 81.9% in pT2 and 66.3% in pT3). There were 6 cases of regional recurrence and distant metastasis in 3 cases. Nine patients died, only 4 due to disease progression. The disease-free survival at 2 years was 73.6%, and cause-specific survival was 89.4%. Acute complications were: one bleeding when removing the implant that required blood transfusion, lingual ulcer in 7 patients and severe mucositis in 2. Chronic complications were: 3 osteonecrosis and chronic lingual pain in 1 patient.
Conclusion. PIHB in carcinoma of the tongue is a technique with good local control and disease-free survival, with few acceptable complications. It allows less aggressive surgery with better tongue functionality, greater accuracy when placing the implant, higher doses with better dose distribution and earlier irradiation, avoiding surgical acts.

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Permanent-seed-brachytherapy in prostate cancer: The Catalan-institute-of-oncology experience

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Purpose. To evaluate the outcomes of patient (Pts) with low-risk-prostate-cancer treated with seeds monotherapy.
Material and methods. We reviewed retrospectively 700 pts who had undergone transperineal-ultrasound-guided-implantation with I-125-seeds as monotherapy between January 2000 and December 2012. All pts received 144/145 Gy. The implant dose was defined as the dose delivered to 95% of the prostate volume. D90 was between 100% and 150%. The median f-up was 63 months (range 6–164). 11 pts were lost. Median age was 64.8 years (range 35–79). We have considered separately the local relapse as biopsy-proved-tumor after seed implantation, or evidence of metastases, and elevation of the prostate-specific antigen level beyond the nadir value plus 2 ng/mL as biochemical failure.
Results. The Gleason-score (G) was less than 7 in 684 pts (97.7%), G7 13 pts (1.9%), and G8 3 pts. 0.4%. The initial prostate-specific-antigen (PSA) level was lower than 10 ng/mL in 664 pts (94.4%), 10.1–20 in 32 pts (4.6%). The disease stage was up to T2a in 685 pts 97.8%; T2b–T2c in 15 (2.2%). 85 pts (12.1%) received hormonal ablation. Overall survival was 94% (CI 92–96) and 84% (CI 78–90) at 5 and 10-year. The cause specific survival was 100% and 97% (CI 95–99) at 5 and 10 year. The disease free survival was 95% (CI 93–97) and 86% (CI 80–92) at the 5 and 10 year. The 5 and 10-year biochemical disease-free were 95% (CI 93–97) and 85% (CI 79–91) respectively. The GII and GIII rectal acute toxicity were 2.3% ($n = 16$) and 1.4%($n = 10$). The GII and GIII genitourinary acute toxicity were 22.6% and 6.9%: 59 pts needed urinary catheter (8.4%), 30 pts needed urinary cistostomy (4.3%) and 17 pts needed TUR (2.4%). The GII and GIII rectal late toxicity were 1% ($n = 7$) and 1.5% ($n = 11$), the GII and GIII genitourinary late toxicity were 6.2% ($n = 44$) and 3.2% ($n = 23$). Only 3 pts died for progression and 1 for toxicity.
Conclusion. Our results in prostate permanent seeds are similar to the expected ones in terms of efficacy and secondary acute and chronic side-effects.

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Plaque brachytherapy for choroidal melanoma: A 6-year experience

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Purpose/objective. The main advantages of episcleral plaque brachytherapy in choroidal melanoma, compared to enucleation, are the possibility of preserving vision and secondly organ preservation. Local control is relevant and it is associated with prolonged survival. The objectives are: to evaluate tumor local control (LC), the safety of the procedure and to report treatment-related complications.
Materials and methods. 100 consecutive patients with choroidal melanoma (59 females and 41 males) underwent treatment with Iodine-125 (125I) or ruthenium-106 (106Ru) since July 2006. The mean age was 56.5 years. According to the COMS classification, 19 small tumors, 64 medium and 17 were large ones. 65.55% of cases were localized in the temporal quadrants. The diagnosis was based on the results of ophthalmoscopic and ultrasonographic examination, and all patients underwent metastatic workup. For dosimetric purposes, a virtual simulator of the eyeball was used for extrapolation of ultrasound and fundoscopy imaging

to determine the target volume. Episcleral plaques were applied using standard surgical techniques. Plaque repositioning and verification were done using intraoperative ultrasound. The prescribed dose to the apex of the tumor was 85 Gy.
Results. Median follow-up was 36 (6–75) months. LC was obtained in 93% (93/100) of cases. 11 out of 100 patients were enucleated, 7 of them due to complications. 2 tumor-related deaths with metastatic disease were observed. 65.5% of patients preserved eye vision and the remaining 34.5% presented visual impairment. The most acute complication was local haemorrhage in 3 patients (3%). 38% of late complications included retinopathy in 6 cases, neuropathy in 2, maculopathy in 23, glaucoma neovascular in 5, vitreous haemorrhage in 2.
Conclusions. The use of plaque radiotherapy allows for safe and effective therapy in patients with choroidal melanoma of various sizes. The 6-year results are favorable in terms of local control with an acceptable rate of acute and late complications

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Qualitative evolution of IPSS after I-125 prostate brachytherapy

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Introduction. I-125 brachytherapy is a minimally invasive treatment for low-intermediate risk prostate cancer. Acute urinary toxicity includes both irritative and obstructive symptoms, which tend to be the bothersome within the first few week after treatment and gradually return to baseline during the next 12 months.
Objective. To evaluate the evolution of urinary morbidity after I-125 prostate brachytherapy using International Prostate Symptom Score (IPSS).
Methods. Of 41 patients with low and intermediate risk prostate cancer treated with I-125 brachytherapy as monotherapy or combined with EBRT between March of 2011 and December of 2012, 18 had a follow up of 15 months. IPSS was recorded prospectively within first 3 months, then at 9 and 15 months after implant. It was catalogued as mild ($\leq$7), moderate (8–19) or severe ($\geq$20).
Results. From the 18 eligible patients, IPSS preimplantation was mild at 8 of them, and moderate at 10. Within the first 3 months, symptoms were mild, moderate and severe at 12, 5 and 1 patients respectively, at 9 months at 13, 5 and 0 respectively and at 15 months at 11, 6 and 1 respectively. Comparing the baseline and the situation of the last review, 10 patients have improved and 4 of them were down stanging (passing of moderate to mild symptoms); 5 patients have deteriorated and 3 of them were up stanging (passing of mild to moderate or severe symptoms); the rest of the patients have not experienced changes bigger than one point. Only 1 patient within the first month postimplant had acute urinary retention and needed RTU. However in the review at month 15 postimplantation his symptoms were moderate as before implant.
Conclusion. Brachytherapy was generally well tolerated and after 15 months postimplantation most of the patients improved and had mild symptoms, being complications and severe symptoms unusual.

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Rectal distension increases rectal doses during vaginal cuff brachytherapy

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Purpose. A rectal cleansing was stated before LDR gynaecological brachytherapy, nowadays some groups advocate it previous to HDR treatments despite no studies exist analysing the consequences of rectal distension during vaginal cuff brachytherapy. Our aim of was to define how rectal distension affects dosimetric values on organs at risk.
Materials and methods. CT sets (337) derived from 92 patients treated with vaginal cuff brachytherapy were re-segmented and re-planed for study purpose under the same parameters. Rectum DVH values were extracted and multiple regression was carried out. Variables analysed were: cylinder angle placement related to the craneo-caudal patient axis, rectum volume, cylinder diameter, type of rectal content.
Results. Rectum volume had a significant association ($p < .0001$) with the type of rectal content. Gas pockets inside the rectum produce the highest rectal DVH results. Multiple linear regression model found cylinder angle position, type of rectal content and cylinder diameter the significant variables related to large rectum DVH values analysed.
Conclusion. Our results suggest that a modest improvement on rectal dose deposition could be associated with the rectum cleaning prior to the procedure.

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